



RULE-MAKING ORDER
(RCW 34.05.360)

CR-103 (7/23/95)

Agency: State Building Code Council

- Permanent Rule**
- Emergency Rule**
- Expedited Repeal**

(1) Date of adoption: November 16, 1995

(2) Purpose: To adopt regulations in accordance with the Washington Clean Air Act (RCW 70.94.457) that limit particulate emissions for certified factory-built fireplaces and new masonry or concrete fireplaces

(3) Citation of existing rules affected by this order:
Repealed:
Amended:
Suspended:

(4) Statutory authority for adoption: RCW 19.27.074(1)
Other authority: Washington Clean Air Act, RCW 70.94.457(1)(b), (c)

PERMANENT RULE ONLY
Adopted under notice filed as WSR 95-16-125 on August 2, 1995 (date).
Describe any changes other than editing from proposed to adopted version: Testing starting and stopping of collecting particulate emissions was changed to 25 degrees F above ambient temperature, rather than 100 degrees F.

EMERGENCY RULE ONLY
Under RCW 34.05.350 the agency for good cause finds:
 (a) That immediate adoption, amendment, or repeal of a rule is necessary for the preservation of the public health, safety, or general welfare, and that observing the time requirements of notice and opportunity to comment upon adoption of a permanent rule would be contrary to the public interest.
 (b) That state or federal law or federal rule or a federal deadline for state receipt of federal funds requires immediate adoption of a rule.
Reasons for this finding:

EXPEDITED REPEAL ONLY
Under Preproposal Statement of Inquiry filed as WSR _____ on _____ (date).

(5.3) Any other findings required by other provisions of law as precondition to adoption of effectiveness of rule?
 Yes No If Yes, explain:

(6) Effective date of rule:
Permanent Rules **Emergency Rules**
 31 days after filing Immediately
 Other (specify) 01/01/97 Later (specify) _____
*(If less than 31 days after filing, specific finding in 5.3 under RCW 34.05.380(3) is required)

CODE REVISER USE ONLY
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DEC 20 1995
TIME: 11:04
WSR 96-01-120

NAME (TYPE OR PRINT)
Gene J. Colin
SIGNATURE
[Signature]
TITLE Council Chair **DATE** 12/19/95

**Note: If any category is left blank, it will be calculated as zero.
No descriptive text.**

**Count by whole WAC sections only, from the WAC number through the history note.
A section may be counted in more than one category.**

The number of sections adopted in order to comply with:

Federal statute:	New _____	Amended _____	Repealed _____
Federal rules or standards:	New _____	Amended _____	Repealed _____
Recently enacted* state statutes:	New _____	Amended _____	Repealed _____

*(current calendar year)

The number of sections adopted at the request of a nongovernmental entity:

New _____ Amended _____ Repealed _____

The number of sections adopted on the agency's own initiative:

New _____ Amended _____ Repealed _____

The number of sections adopted in order to clarify, streamline, or reform agency procedures:

New _____ Amended _____ Repealed _____

The number of sections adopted using:

Negotiated rule making:	New <u>11</u>	Amended _____	Repealed _____
Pilot rule making:	New _____	Amended _____	Repealed _____
Other alternative rule making:	New _____	Amended _____	Repealed _____

SPECIAL CONSTRUCTION

NEW SECTION

WAC 51-30-3102 Section 3102.5.4.

3102.5.4 Emission Standards for Factory-built Fireplaces. After January 1, 1997, no new or used factory-built fireplace shall be installed in Washington State unless it is certified and labeled in accordance with procedures and criteria specified in the UBC Standard 31-2.

To certify an entire fireplace model line, the internal assembly shall be tested to determine its particulate matter emission performance. Retesting and recertifying is required if the design and construction specifications of the fireplace model line internal assembly change. Testing for certification shall be performed by a Washington State Department of Ecology (DOE) approved and U. S. Environmental Protection Agency (EPA) accredited laboratory.

3102.7.14 Emission Standards for Certified Masonry and Concrete Fireplaces. After January 1, 1997, new certified masonry or concrete fireplaces installed in Washington State shall be tested and labeled in accordance with procedures and criteria specified in the UBC Standard 31-2.

To certify an entire fireplace model line, the internal assembly shall be tested to determine its particulate matter emission performance. Retesting and recertifying is required if the design and construction specifications of the fireplace model line internal assembly change. Testing for certification shall be performed by a Washington State Department of Ecology (DOE) approved and U. S. Environmental Protection Agency (EPA) accredited laboratory.

NEW SECTION

WAC 51-30-31200 Section 31.200.

UNIFORM BUILDING CODE STANDARD 31-2
STANDARD TEST METHOD FOR PARTICULATE
EMISSIONS FROM FIREPLACES

See Sections 3102.5.4 and 3102.7.14, *Uniform Building Code*
SECTION 31.200 - TITLE and SCOPE.

SECTION 31.200. - TITLE. This Appendix Chapter 31-2 shall be known as the "Washington State Standard Test Method for Particulate Emissions from Fireplaces" and may be cited as such; and will be referred to herein as "this Standard".

SECTION 31.200.2 - SCOPE. This Standard covers emissions performance, approval/certification procedures, test laboratory accreditation, record keeping, reporting requirements, and the test protocol for measuring particulate emissions from fireplaces.

All testing, reporting and inspection requirements of this Standard shall be conducted by a Washington State Department of Ecology (DOE) approved testing laboratory. In order to qualify for DOE approval, the test laboratory must be a U. S. Environmental Protection Agency (EPA) accredited laboratory (40 CFR Part 60, Subpart AAA). DOE may approve a test laboratory upon submittal of the following information:

1. A copy of their U. S. EPA accreditation certificate, and
2. A description of their facilities, test equipment, and test-personnel qualifications including education and work experience.

DOE may revoke a test laboratory approval when the test laboratory is no longer accredited by the U. S. EPA or if DOE determines that the test laboratory does not adhere to the testing requirements of this Chapter.

NEW SECTION

WAC 51-30-31201 Section 31.201--Definitions. For the purpose of this Standard certain terms are defined as follows:

ANALYZER CALIBRATION ERROR is the difference between the gas concentration exhibited by the gas analyzer and the known concentration of the calibration gas when the calibration gas is introduced directly to the analyzer.

BURN RATE is the average rate at which test-fuel is consumed in a fireplace measured in kilograms of wood (dry basis) per hour (kg/hr) during a test-burn.

CALIBRATION DRIFT is the difference in the analyzer reading from the initial calibration response at a mid-range calibration value after a stated period of operation during which no unscheduled maintenance, repair, or adjustment took place.

CALIBRATION GAS is a known concentration of Carbon Dioxide (CO₂), Carbon Monoxide (CO), or Oxygen (O₂) in Nitrogen (N₂).

CERTIFICATION or AUDIT TEST is the completion of at least one, three-fuel-load test-burn cycle in accordance with Section 31.202.

FIREBOX is the chamber in the fireplace in which a test-fuel charge(s) is placed and combusted.

FIREPLACE is a wood burning device which is exempt from U. S. EPA 40 CFR Part 60, Subpart AAA and:

1. is not a cookstove, boiler, furnace, or pellet stove as defined in 40 CFR Part 60, Subpart AAA, and
2. is not a masonry heater as defined in Section 31.201, and
3. see Section 3102, Uniform Building Code for definitions of masonry and factory-built fireplaces as used in this Standard.

FIREPLACE DESIGN is the construction and/or fabrication specifications including all dimensions and materials required for manufacturing or building fireplaces with identical combustion function and particulate emissions factors.

FIREPLACE MODEL LINE is a series of fireplace models which all have the same internal assembly. Each model in a model line may have different facade designs and external decorative features.

FIREPLACE, CERTIFIED, is a fireplace that meets the emission performance standards when tested according to UBC Standard 31-2.

FIREPLACE, NON-CERTIFIED, (masonry or concrete) is any fireplace that is not a certified fireplace. A non-certified fireplace will be subject to applicable burn ban restrictions.

INTERNAL ASSEMBLY is the core construction and firebox design which produces the same function and emissions factor for a fireplace model line.

MASONRY HEATER is a wood burning device designed and intended for domestic space heating or domestic water heating, which meets the following criteria:

1. An appliance whose core is constructed primarily of manufacturer-built, supplied or specified masonry materials (i.e., stone, cemented aggregate, clay, tile, or other non-combustible non-metallic solid materials) which weigh at least 1,760 pounds (800 kg);
2. The firebox effluent travels horizontally and/or downward through one or more heat absorbing masonry duct(s) for a distance at least the length of the largest single internal firebox dimension before leaving the masonry heater;

Where, for the purposes of this subparagraph:

2.1 Horizontal or downward travel distance is defined as the net horizontal and/or downward internal duct length, measured from the top of the uppermost firebox door opening(s) to the exit of the masonry heater as traveled by any effluent on a single pathway through duct channel(s) within the heater (or average net internal duct length for multiple pathways of different lengths, if applicable). Net internal duct length is measured from center of the internal side or top surface of a duct, horizontally or vertically to the center of the opposite side or the bottom surface of the same duct, and summed for multiple ducts or directions on a single pathway, if applicable. For duct channel(s) traversing horizontal angles of less than ninety degrees from vertical, only the net actual horizontal distance traveled is included in the total duct length.

2.2 The largest single internal firebox dimension is defined as the longest of either the length or the width of the firebox hearth and the height of the firebox, measured from the floor of

the combustion chamber (hearth) to the top of the uppermost firebox door opening(s).

3. The appliance has one or more air-controlling doors for fuel-loading which are designed to be closed during the combustion of fuel loads, and which control the entry of the combustion air (beyond simple spark arresting screen(s)) to one or more inlet(s) as prescribed by the masonry heater manufacturer. Manufacturer means a person who is engaged in the business of designing and constructing masonry heaters;

4. The appliance is assembled in conformance with the Underwriters' Laboratories-listed and/or manufacturer's specifications for its assembly and, if the core is constructed with a substantial proportion of materials not supplied by the manufacturer, and is certified by a representative of the manufacturer to be substantially in conformance with those specifications; and

5. The appliance has a label permanently affixed to the appliance stating that the appliance meets the criteria of this section and identifying its manufacturer and model.

RESPONSE TIME is the amount of time required for the measurement system to display 95 percent of a step change in gas concentration.

SAMPLING SYSTEM BIAS is the difference between the gas concentrations exhibited by the analyzer when a known concentration gas is introduced at the outlet of the sampling probe and when the sample gas is introduced directly to the analyzer.

SPAN is the upper limit of the gas concentration measurement range (25 percent for CO₂, O₂, and 5 percent for CO).

TEST FACILITY is the area in which the fireplace is installed, operated, and sampled for emissions.

TEST FUEL LOADING DENSITY is the weight of the as-fired test-fuel charge per unit area of usable firebox floor (or hearth).

TEST-BURN is an individual emission test which encompasses the time required to consume the mass of three consecutively burned test-fuel charges.

TEST-FUEL CHARGE is the collection of test fuel pieces placed in the fireplace at the start of certification test.

USABLE FIREBOX AREA is the floor (or hearth) area, within the fire chamber of a fireplace upon which a fire may be, or is intended to be built. Usable firebox area is calculated using the following definitions:

1. Length. The longest horizontal fire chamber dimension along the floor of the firebox that is parallel to a wall of the fire chamber.

2. Width. The shortest horizontal fire chamber dimension along the floor of the firebox that is parallel to a wall of the fire chamber.

3. For angled or curved firebox walls and/or sides, the effective usable firebox area shall be determined by calculating the sum of standard geometric areas or sub-areas of the firebox floor.

If a fireplace has a floor area within the fire chamber which is larger than the area upon which it is intended that fuel be placed and burned, the usable firebox area shall be calculated as the sum of standard geometric areas or sub-areas of the area intended for fuel placement and burning. For fireplace grates which elevate the fuel above the firebox floor, usable firebox area determined in this manner shall be multiplied by a factor of 1.5. The weight of test-fuel charges for fireplace-grate usable-firebox-area tests, shall not exceed the weight of test-fuel charges determined for the entire fireplace floor area.

ZERO DRIFT is the difference in the analyzer reading from the initial calibration response at the zero concentration level after a stated period of operation during which no unscheduled maintenance, repair, or adjustment took place.

NEW SECTION

WAC 51-30-31202 Section 31.202--Testing.

31.202.1 Applicability. This method is applicable for the certification and auditing of fireplace particulate emission factors. This method describes the test facility, fireplace installation requirements, test-fuel charges, and fireplace operation as well as procedures for determining burn rates and particulate emission factors.

31.202.2 Principle. Particulate matter emissions are measured from a fireplace burning prepared test-fuel charges in a test facility maintained at a set of prescribed conditions.

31.202.3 Test Apparatus.

31.202.3.1 Fireplace Temperature Monitors. Device(s) capable of measuring flue-gas temperature to within 1.5 percent of expected absolute temperatures.

31.202.3.2 Test Facility Temperature Monitor. A thermocouple located centrally in a vertically oriented pipe shield 6 inches (150 mm) long, 2 inches (50 mm) diameter that is open at both ends, capable of measuring air temperature to within 1.5 percent of expected absolute temperatures.

31.202.3.3 Balance. Balance capable of weighing the test-fuel charge(s) to within 0.1 lb (0.05 kg).

31.202.3.4 Moisture Meter. Calibrated electrical resistance meter for measuring test-fuel moisture to within 1 percent moisture content (dry basis).

31.202.3.5 Anemometer. Device capable of detecting air velocities less than 20 ft/min (0.10 m/sec), for measuring air velocities near the fireplace being tested.

31.202.3.6 Barometer. Mercury, aneroid or other barometer capable of measuring atmospheric pressure to within 0.1 inch Hg (2.5 mm Hg).

31.202.3.7 Draft Gauge. Electromanometer or other device for the determination of flue draft (i.e., static pressure) readable to within 0.002 inches of water column (0.50 Pa).

31.202.3.8 Combustion Gas Analyzer. Combustion gas analyzers for measuring Carbon Dioxide (CO₂), Carbon Monoxide (CO), and Oxygen (O₂) in the fireplace exhaust-gas stream must meet all of the following measurement system performance specifications:

1. **Analyzer Calibration Error.** Shall be less than ± 2 percent of the span value for the zero, mid-range, and high-range calibration gases.

2. **Sampling System Bias.** Shall be less than ± 5 percent of the span value for the zero, mid-range, and high-range calibration gases.

3. **Zero Drift.** Shall be less than ± 3 percent of the span over the period of each run.

4. **Calibration Drift.** Shall be less than ± 3 percent of the span value over the period of each run.

5. **Response Time.** Shall be less than 1.5 minutes.

31.202.4 Emissions Sampling Method. Use the emission sampler system (ESS) as described in Section 31.203.12 or an equivalent method as determined by the application of the U. S. EPA Method 301 Validation Procedure (Federal Register, December 12, 1992, Volume 57, Number 250, page 11998) and upon approval of DOE.

31.202.5 Fireplace Installation and Test Facility Requirements. The fireplace being tested must be constructed, if site-built, or installed, if manufactured, in accordance with the designer's/manufacturer's written instructions. The chimney shall have a total vertical height above the base of the fire chamber of not less than 15 feet (4 600 mm). The fireplace chimney exit to the atmosphere must be freely communicating with the fireplace combustion makeup-air source. There shall be no artificial atmospheric pressure differential imposed between the chimney exit to the atmosphere and the fireplace makeup-air inlet.

31.202.6 Fireplace Aging and Curing. A fireplace of any type shall be aged before certification testing begins. The aging procedure shall be conducted and documented by the testing laboratory.

31.202.6.1 Catalyst-Equipped Fireplaces. Operate the catalyst-equipped fireplace using fuel described in Section 31.203. Operate the fireplace with a new catalytic combustor in place and in operation for at least 50 hours. Record and report hourly catalyst exit temperatures, the hours of operation, and the weight of all fuel used.

31.202.6.2 Non-Catalyst-Equipped Fireplaces. Operate the fireplace using the fuel described in Section 31.203 for at least 10 hours. Record and report the hours of operation and weight of all fuel used.

31.202.7 Pretest Preparation. Record the test-fuel charge dimensions, moisture content, weights, and fireplace (and catalyst if equipped) descriptions.

The fireplace description shall include photographs showing all externally observable features and drawings showing all

internal and external dimensions needed for fabrication and/or construction. The drawings must be verified as representing the fireplace being tested and signed by an authorized representative of the testing laboratory.

31.202.8 Test Facility Conditions. Locate the test facility temperature monitor on the horizontal plane that includes the primary air intake opening for the fireplace. Locate the temperature monitor 3 to 6 feet (1 000 to 2 000 mm) from the front of the fireplace in the 90° sector in front of the fireplace. Test facility temperatures shall be maintained between 65° and 90°F (18° and 32°C). Use an anemometer to measure the air velocity. Measure and record the room-air velocity within 2 feet (600 mm) of the test fireplace before test initiation and once immediately following the test-burn completion. Air velocity shall be less than 50 feet/minute (250 mm/second) without the fireplace operating.

NEW SECTION

WAC 51-30-31203 Section 31.203--Test protocol.

31.203.1 Test Fuel. Fuel shall be air dried Douglas fir dimensional lumber or cordwood without naturally associated bark. Fuel pieces shall not be less than 1/2 nor more than 5/6 of the length of the average fire chamber width. Fuel shall be split or cut into pieces with no cross-sectional dimension greater than 6 inches (152 mm). Spacers, if used, shall not exceed 3/4 inches (19 mm) in thickness and 15 percent of the test-fuel charge weight. Fuel moisture shall be in the range of 16 to 20 percent (wet basis) or 19 to 25 percent (dry basis) meter reading.

31.203.2 Test-Fuel Loading Density. The wet (with moisture) minimum weight of each test-fuel charge shall be calculated by multiplying the hearth area in square feet by 7.0 pounds per square foot (square meters x 0.30 kg/m²) (± 10 percent). Three test-fuel charges shall be prepared for each test-burn.

31.203.3 Kindling. The initial test-fuel charge of the three test-fuel charge test-burn shall be started by using a kindling-fuel charge which is up to 50 percent of the first test-fuel charge weight. Kindling-fuel pieces can be any size needed to start the fire or whatever is recommended in the manufacturer's (builder's) instructions to consumers. The kindling-fuel charge weight is not part of the initial test-fuel charge weight but is in addition to it.

31.203.4 Test-Burn Ignition. The fire can be started with or without paper. If used, the weight of the paper must be included in test-fuel charge weight. The remainder of the test-fuel charge may be added at any time after kindling ignition except that the entire first test-fuel charge must be added within 10 minutes after the start of the test (i.e., the time at which the flue-gas temperature at the 8-foot (2 440 mm) level is over 25°F (14°C) greater than the ambient temperature of the test facility).

31.203.5 Test Initiation. Emissions and flue-gas sampling are initiated immediately after the kindling has been ignited and when flue-gas temperatures in the center of the flue at an elevation of 8 feet (2 440 mm) above the base (floor) of the fire chamber reach 25°F (14°C) greater than the ambient temperature of the test facility.

31.203.6 Sampling Parameters. Sampling (from the 8-foot (2 440 mm) flue-gas temperature measurement location) must include:

1. Particulate Emissions
2. Carbon Dioxide (CO₂)'
3. Carbon Monoxide (CO)'
4. Oxygen (O₂)'
5. Temperature(s)

These gases shall be measured on-line (real-time) and recorded at a frequency of not less than once every 5 minutes. These 5-minute readings are to be arithmetically averaged over the test-burn series or alternatively, a gas bag sample can be taken at a constant sample rate over the entire test-burn series and analyzed for the required gases within one hour of the end of the test-burn.

If a fireplace is equipped with an emissions control device which is located downstream from the 8-foot (2 440 mm) flue-gas temperature measurement location, a second temperature, particulate, and gaseous emissions sampling location must be located downstream from the emissions control device but not less than 4 flue diameters upstream from the flue exit to the atmosphere. The two sampling locations must be sampled simultaneously during testing for each fireplace configuration being tested.

31.203.7 Test-Fuel Additions and Test Completion. The second and third test-fuel charges for a test-burn may be placed and burned in the fire chamber at any time deemed reasonable by the operator or when recommended by the manufacturer's and/or builder's instructions to consumers.

No additional kindling may be added after the start of a test-burn series and the flue-gas temperature at the 8-foot (2 440 mm) level above the base of the hearth must always be 25°F (14°C) greater than the ambient temperature of the test facility for a valid test-burn series. Each entire test-fuel charge must be added within 10 minutes from the addition of the first piece.

A test (i.e., a three test-fuel charge test-burn series) is completed and all sampling and measurements are stopped when all three test-fuel charges have been consumed (to more than 90 percent by weight) in the firebox and the 8-foot (2 440 mm) level flue-gas temperature drops below 25°F (14°C) greater than the ambient temperature of the test facility. Within 5 minutes after the test-burn is completed and all measurements and sampling has stopped, the remaining coals and/or unburned fuel, shall be extinguished with a carbon dioxide fire extinguisher. All of the remaining coals, unburned fuel, and ash shall be removed from the firebox and weighed to the nearest 0.1 pound (0.05 kg). The weight of these unburned materials and ash shall be subtracted from the total test-burn fuel weight when calculating the test-burn burn rate. A test-burn is invalid if less than 90 percent of the weight of the total test-fuel charges plus the kindling weight have been consumed in the fireplace firebox.

31.203.8 Test-Fuel Charge (Load) Adjustment. Test-fuel charges may be adjusted (i.e., repositioned) once during the burning of each test-fuel charge. The time used to make this adjustment shall be less than 15 seconds.

31.203.9 Air Supply Adjustment. Air supply controls, if the fireplace is equipped with controls, may not be adjusted during any test-burn series after the first 10 minutes of startup of each fuel load. All air supply settings must be set to the lowest level at the start of a test and shall remain at the lowest setting throughout a test-burn.

31.203.10 Auxiliary Fireplace Equipment Operation. Heat exchange blowers (standard or optional) sold with the fireplace shall be operated during all test-burns following the manufacturer's written instructions. If no manufacturer's written instructions are available, operate the heat exchange blower in the "high" position. (Automatically operated blowers shall be operated as designed.) Shaker grates, by-pass controls, afterburners, or other auxiliary equipment may be adjusted only once per test-fuel charge following the manufacturer's written instructions. Record and report all adjustments on a fireplace operational written-record.

31.203.11 Fireplace Configurations. One, 3 test-fuel charge test-burn shall be conducted for each of the following fireplace operating configurations:

1. Door(s) closed, with hearth grate;
2. Door(s) open, with hearth grate;
3. Door(s) closed, without hearth grate;
4. Door(s) open, without hearth grate; and
5. With no doors, and draft inducer on.

No test-burn series is necessary for any configuration the appliance design cannot or is not intended to accommodate. If a configuration is not tested, the reason must be submitted with the test report and the appliance label must state that the appliance cannot be used in that configuration by consumer users.

One emission factor result, or one emission factor average, as provided in paragraph 31.203.11.2, from each fireplace configuration tested shall be compiled into an arithmetic average of all the configurations tested for determining compliance with the requirements of paragraph 31.204.2.

31.203.11.1 Closed-Door(s) Testing. For all closed-door test configurations, the door(s) must be closed within 10 minutes from the addition of the first test-fuel piece of each test-fuel charge in a test-burn. During a test-burn, the door(s) cannot be re-opened except during test-fuel reload and adjustment as referenced in Sections 31.203.7 and 31.203.8.

31.203.11.2 Additional Test-Burn. The testing laboratory may conduct more than one test-burn series for each of the applicable configurations specified in Section 31.203.11. If more than one test-burn is conducted for a specified configuration, the results from at least 2/3 of the test-burns for that configuration shall be used in calculating the arithmetic average emission factor for that configuration. The measurement data and results of all tests

conducted shall be reported regardless of which values are used in calculating the average emission factor for that configuration.

31.203.12 Emissions Sampling System (ESS).

31.203.12.1 Principle. Figure 31-2-1 shows a schematic of an ESS for sampling solid-fuel-fired fireplace emissions. Except as specified in Section 31.202.4, an ESS in this configuration shall be used to sample all fireplace emissions. The ESS shall draw flue gases through a 15 inch (380 mm) long, 3/8 inch (10 mm) O.D. stainless steel probe which samples from the center of the flue at an elevation which is 8 feet (2 440 mm) above the floor of the firebox (i.e., the hearth). A flue-gas sample shall then travel through a 3/8 inch (10 mm) O.D. Teflon® tube, and a heated U. S. EPA Method 5-type glass-fiber filter (40 CFR Part 60, Appendix A) for collection of particulate matter. The filter shall be followed by an in-line flow-through cartridge containing 20 grams of XAD-2 sorbent resin for collecting semi-volatile hydrocarbons. Water vapor shall then be removed from the sampled gas by a silica-gel trap. Flue-gas oxygen concentrations, which shall be used to determine the ratio of flue-gas volume to the amount of fuel burned, are measured within the ESS system by an electrochemical cell meeting the performance specifications presented in Section 31.202.3.8 (1.).

The ESS shall use a critical orifice to maintain a nominal flue-gas sampling rate of 0.035 cfm (0.0167 liters per second). The actual flow rate through each critical orifice shall be determined to within 0.000354 cubic feet (0.01 liters) per second before and after each test-burn with a bubble flow meter to document exact sampling rates. The post-test-burn critical-orifice flow-rate determinations shall be performed before the ESS is dismantled for sample recovery and clean-up. Pre-test-burn and post-test-burn critical-orifice flow-rate measurements shall be within 0.0000117 cubic feet (0.00033 liters) per second of each other or the test-burn emissions results shall be invalid. Temperatures shall be monitored using type K ground-isolated, stainless-steel-sheathed thermocouples.

The ESS unit shall return particle-free and dry exhaust gas to the flue via a 1/4 inch (6 mm) Teflon® line and a 15 inch (380 mm) stainless steel probe inserted into the flue. A subsample aliquot of the flue-gas sample-gas stream exiting the ESS unit, shall be pumped into a 1 cubic foot (29 liter) Tedlar® bag for measuring the average carbon dioxide, carbon monoxide, and confirmation of average oxygen concentrations for the test period. Flow to the subsample gas bag shall be controlled by a solenoid valve connected to the main pump circuit and a fine-adjust needle-controlled flow valve. The solenoid valve shall be open only when the pump is activated, allowing the subsample gas to be pumped into the gas bag at all times when the ESS pump is on. The rate of flow into the bag shall be controlled by the fine-adjust metering needle-valve which is adjusted at setup so that 4.7 to 5.2 gal (18 to 20 liters) of gas is collected over the entire 3 test-fuel charge test-burn without over-pressurizing the gas sample bag.

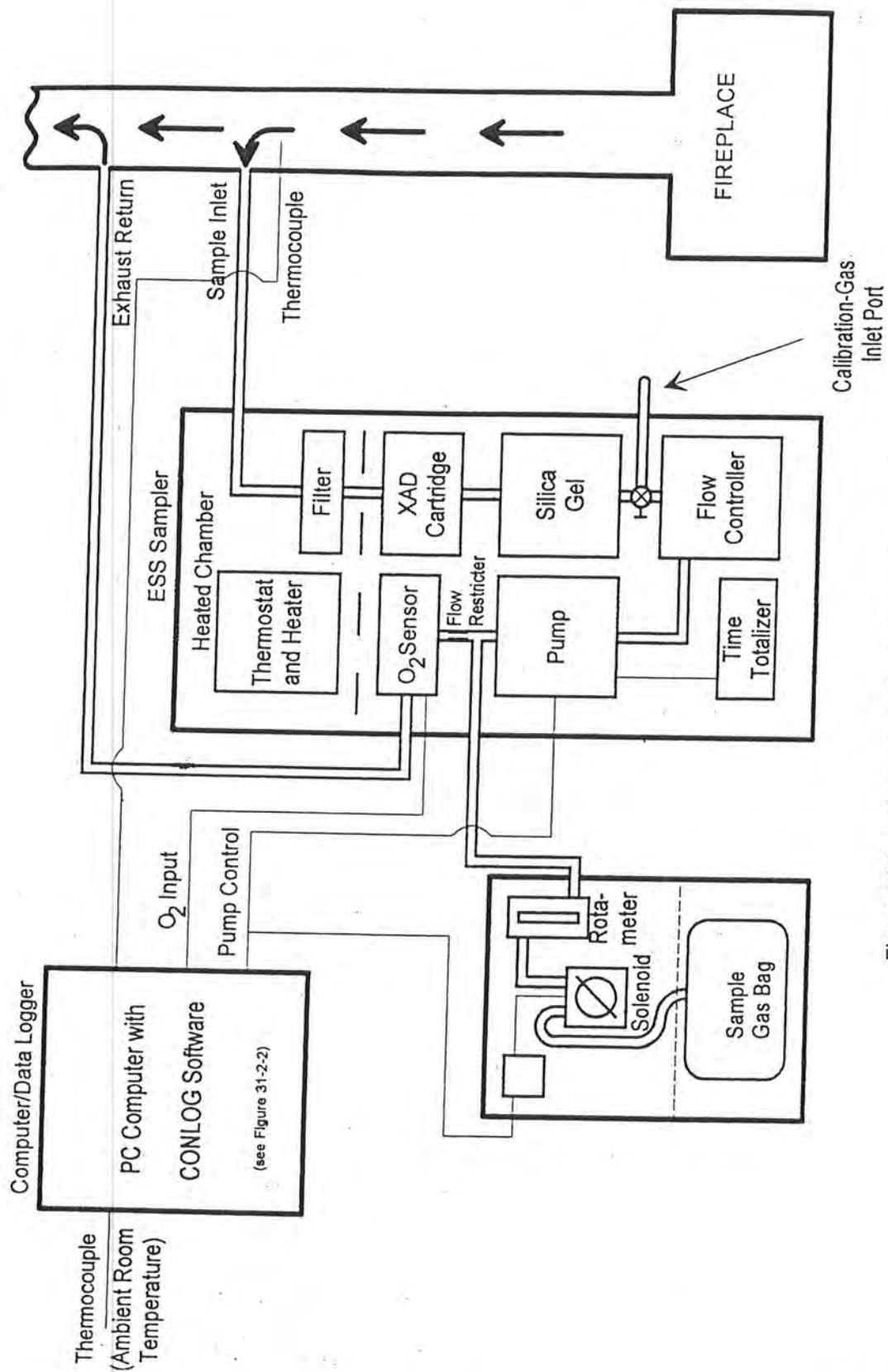


Figure 31-2-1. Schematic of ESS/Data Logger system.

31.203.12.2 The Data Acquisition and Control System. The data acquisition and control system for the ESS is shown in Figure 31-2-2. This system consists of a personal computer (PC) containing an analog-to-digital data processing board (12-bit precision), a terminal (connection) box, and specialized data acquisition and system control software (called CONLOG).

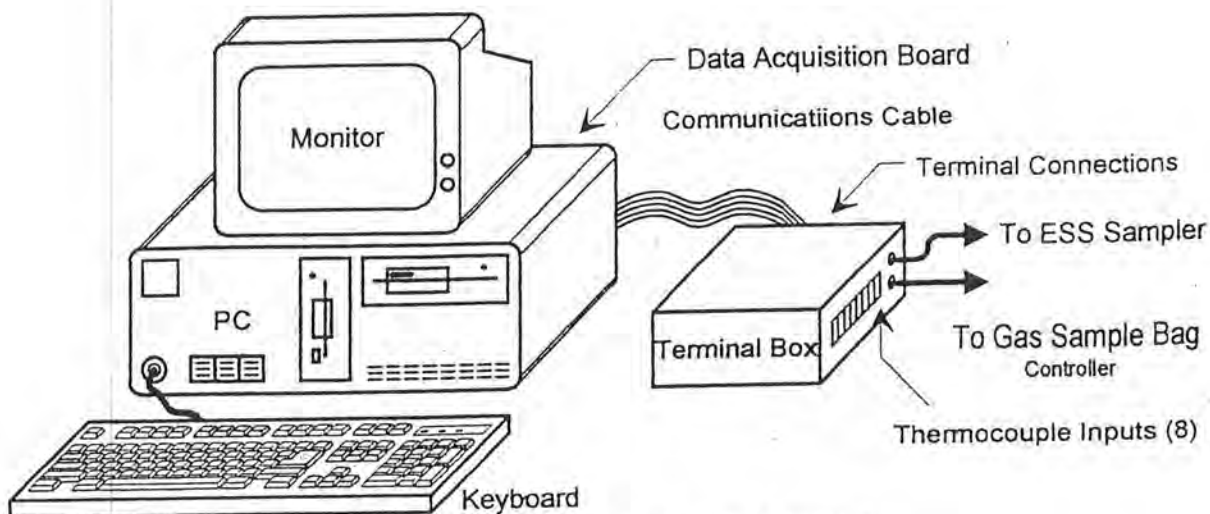


Figure 31-2-2. ESS data logger system.

For fireplace testing, the CONLOG software is configured to control, collect, and store the following data:

1. Test-period starting and ending times and dates, and total length of sampling period,
2. Pump-cycle on/off, cycle length and thermocouple (TC) cycle recording interval (frequency),
3. Temperature records, including flue-gas and ambient temperatures, averaged over pre-selected intervals,
4. Date, times, and weights of each added fuel load, and
5. Flue-gas oxygen measurements taken during each sample cycle.

During testing, instantaneous readings of real-time data shall be displayed on the system status screen. These data shall include the date, time, temperatures for each of the TCs, and flue-gas oxygen concentrations. The most recent 15 sets of recorded data shall also be displayed.

Flue-gas sampling and the recording of flue-gas oxygen concentrations shall only occur when flue-gas temperatures are above 25°F (14°C) greater than the ambient temperature of the test facility. Temperatures and fueling shall always be recorded at five-minute intervals regardless of flue-gas temperature. The ESS

sampling-pump operating cycle shall be adjustable as described in Section 31.203.12.3.

31.203.12.3 ESS Sampling-Pump Operating Cycle. The ESS sampling-pump operating cycle shall be adjusted to accommodate variable test-fuel charge sizes, emission factors, and the length of time needed to complete a test-burn series. The sampler-pump operation shall be adjustable from 1 second to 5 minutes (100 percent) "on" for every 5-minute test-burn data-recording interval. This will allow adjustment for the amount of anticipated emissions materials that will be sampled and deposited on the ESS filter, XAD-2, and the other system components. It is recommended that the minimum sample quantities stipulated in Section 31.203.12.4 be used to calculate the appropriate pump cycle "on" and "off" periods. It should be noted that if the sampler collects too much particulate material on the filter and in the XAD-2 cartridge, the unit may fail the sample flow calibration check required at the end of each test-burn.

31.203.12.4 Minimum Sample Quantities. For each complete 3 test-fuel charge test-burn, the ESS must catch a minimum total particulate material mass of at least 0.231 grains (15 mg). Alternatively, the ESS must sample a minimum of 10 cubic feet (283 liters) during each 3 test-fuel charge test-burn. If this volume cannot be sampled in the test-burn time period, two ESS samplers must be utilized to sample fireplace emissions simultaneously during each test-burn. If emissions results from the two ESSs are different by more than 10 percent of the lower emissions-factor result, the test-burn results are invalid. An arithmetic average is calculated for test-burn results when two ESSs are utilized.

31.203.12.5 Equipment Preparation and Sample Processing Procedures.

31.203.12.5.1. Prior to emissions testing, the ESS unit shall be prepared with a new, tared glass-fiber filter and a clean XAD-2 sorbent-resin cartridge. Within 3 hours after testing is completed, the stainless steel sampling probe, Teflon® sampling line, filter holder, and XAD-2 cartridge(s) shall be removed from the test site and transported to the laboratory for processing. Each component of the ESS sampler shall be processed as follows:

1. Filter: The glass fiber filter (4 inches (102 mm) in diameter) shall be removed from the ESS filter housing and placed in a petri dish for desiccation and gravimetric analysis.

2. XAD-2 sorbent-resin cartridge: The sorbent-resin cartridge shall be extracted in a Soxhlet extractor with dichloromethane for 24 hours. The extraction solution shall be transferred to a tared glass beaker and evaporated in an ambient-air dryer. The beaker with dried residue shall then be desiccated to constant weight (less than ± 0.5 mg change within a 2-hour period), and the extractable residue shall be weighed.

3. ESS hardware: All hardware components which are in the flue-gas sample stream (stainless steel probe, Teflon® sampling line, stainless steel filter housing, and all other Teflon® and stainless steel fittings) through the top of the sorbent-resin cartridge, shall be cleaned with a solvent mixture of 50 percent dichloromethane and 50 percent methanol. The cleaning solvent solutions shall be placed in tared glass beakers, evaporated in an

ambient-air dryer, desiccated to constant weight (less than ± 0.5 mg change within a 2-hour period), and weighed.

EPA Method 5H procedures (40 CFR Part 60, Appendix A) for desiccation and weighing time intervals shall be followed for steps 1 through 3 above.

31.203.12.5.2 The ESS shall be serviced both at the start and end of a fireplace testing period. During installation, leak checks shall be performed; the thermocouples, fuel-weighing scale, and oxygen-cell shall be calibrated, and the data logger shall be programmed. At the end of the test period, final calibration, and leak-check procedures shall again be performed, and the ESS sampling line, filter housing, XAD-2 cartridge, sampling probe, and Tedlar® bag shall be removed, sealed, and transported to the laboratory for analysis. If the pre-test and post-test leak checks of the ESS system exceed 0.00033 liters per second, the test-burn emission results shall be invalid.

31.203.12.6 Data Processing and Quality Assurance.

31.203.12.6.1 Upon returning to the laboratory facilities, the data file (computer disk) shall be reviewed to check for proper equipment operation. The data-logger data files, log books, and records maintained by field staff shall be reviewed to ensure sample integrity.

The computer-logged data file shall be used in conjunction with the ESS particulate samples and sample-gas bag analyses to calculate the emission factor, emission rate, and fireplace operational parameters. An example ESS results report is presented in Table 31-2-A.

31.203.12.6.2 Burning Period. The total burning period is calculated by:

Total Burning Period = (Length of each sample cycle) x (Number of flue temperature readings over 25°F (14°C) greater than the ambient temperature of the test facility).

WHERE:

1. Length of each sample cycle: The time between each temperature recording as configured in the CONLOG software settings (standardized at 5 minutes).

2. Number of flue temperature readings during fireplace use: The total number of temperature readings when the calibrated temperature value was more than 25°F (14°C) greater than the ambient temperature of the test facility.

31.203.12.6.3 Particulate Emissions.

31.203.12.6.3.1 ESS Particulate Emission Factor. The equation for the total ESS particulate emission factor for each test-burn presented below produces reporting units of grams per dry kilogram of fuel burned (g/kg):

$$\text{Particulate emission factor (g/kg)} = \frac{(\text{Particulate Catch}) \times (\text{Stoichiometric Volume}) \times (\text{Flue-gas Dilution Factor})}{(\text{Sampling Time}) \times (\text{Sampling Rate})}$$

WHERE:

1. Particulate Catch: The total mass, in grams, of particulate material caught on the filter, in the XAD-2 resin cartridge (semi-volatile compounds); and in the probe clean-up and rinse solutions.

2. Stoichiometric Volume: Stoichiometric volume is the volume of dry air needed to completely combust one dry kilogram of fuel with no "excess air". This value is determined by using a chemical reaction balance between the specific fuel being used and the chemical components of air. The stoichiometric volume for Douglas fir is 86.78 cubic feet per pound (5 404 liters per dry kilogram) at 68°F (20°C) and 29.92 inches (760 mm) of mercury pressure.

3. Flue-gas Dilution Factor: The degree to which the sampled combustion gases have been diluted in the flue by air in excess of the stoichiometric volume (called excess air). The dilution factor is obtained by using the average sampled carbon dioxide and carbon monoxide values obtained from the sample gas bag analyses and the following equation.

$$18.53 + \left(\left(1 - \left(\frac{(\text{CO}_2 + 1/2 \text{ CO})}{18.53} \right) \right) \right) \times 2.37$$

$$\text{Flue-Gas Dilution Factor} = \frac{\text{18.53 + (1 - ((CO}_2 + 1/2 \text{ CO}) / 18.53)) \times 2.37}{(\text{CO}_2 + 1/2 \text{ CO})}$$

Note:

Multiplying the g/kg emission factor by the burn rate (dry kg/hr) yields particulate emissions in grams per hour (g/hr). Burn rate is calculated by the following equation:

$$\text{Burn Rate (kg/hr)} = \frac{\text{Total Fuel (kg)}}{\text{Total Burn Period (hours)}}$$

WHERE:

Total Fuel is the total fuel added during the entire test-burn minus the remaining unburned materials at the end of the test-burn.

4. Sampling Time: The number of minutes the sampler pump operated during the total test-burn period.

5. Sampling Rate: Sampling rate is controlled by the critical orifice installed in the sampler. The actual calibrated sampling rate is used here.

31.203.12.6.3.2 EPA Method 5H Particulate Emissions. ESS-measured emissions factors submitted to DOE for approval must first be converted to U. S. EPA Method 5H equivalents. The ESS particulate emissions factor results obtained in Section 31.203.12.6.1 are converted to be equivalent to the U. S. EPA Method 5H emissions factor results by the following equation:

$$1.254 + (0.302 \times \text{PEF}) + (1.261 \times 10^{-\text{PEF}})$$

WHERE:

PEF is the ESS-measured particulate emission factor for a test-burn.

31.203.12.6.4 CO Emissions. The carbon monoxide (CO) emission factor equation produces grams of CO per dry kilogram of fuel burned. The grams per kilogram equation includes some equation components described above.

$$\text{CO emission factor (g/kg)} = \frac{(\text{Fraction CO}) \times (\text{Stoich. Volume}) \times (\text{Dilution Factor}) \times (\text{Molecular Weight of CO})}{(24.45 \text{ L/mole})}$$

WHERE:

1. Fraction CO: The fraction of CO measured in the gas sampling bag.

Note: Percent CO divided by 100 gives the fraction CO.

2. Molecular Weight of CO: The gram molecular weight of CO, 28 pounds per pound-mole (28.0 g/g-mole).

Multiplying the results of the above equation by the burn rate (dry kg/hr) yields the grams per hour (g/hr) CO emission rate.

ESS Emission Results

Test Facility Location: XXXX
 Test Laboratory: XXXX
 Test-Burn Number: XXXX
 Start Time/Date: XXXX
 End Time/Date: XXXX
 Fireplace Model: XXXX

TIME

Total Test Period 152.3 hours
 Total Burn Time 64.6 hours
 Flue >25 Degrees F
 above ambient temperature 42.4 %

CARBON MONOXIDE EMISSIONS

Gram / Kilogram 48.0 g/kg
 Gram / Hour 64.0 g/hr
 Gram / Cubic Meter 1.25 g/m³

ESS SETTINGS

ESS Sample Rate 1.004 l/min
 Sample Cycle 5.0 min
 Sample Time / Sample Cycle 0.443 min

AVERAGE TEMPERATURES

Fuel-Gas Temperatures 275 °F
 135 °C
 Flue Exit Temperature 308 °F
 154 °C
 Test Facility Ambient Temperature 66 °F
 19 °C

TEST FUEL

Total Fuel Used (wet weight) 101.3 kg
 Ave. Fuel Moisture (dry basis) 17.7 %
 Total Fuel Used (dry weight) 86.1 kg
 Average Test-Fuel Charge 14.5 kg
 Average Burn Rate 1.33 dry
 kg/hr

AVERAGE FLUE-GAS CONCENTRATIONS

Flue Oxygen (SE) 18.15 %
 Flue Oxygen (gas bag or analyzer) 18.05 %
 Flue CO (gas bag or analyzer) 0.10 %
 Flue CO₂ (gas bag or analyzer) 2.60 %

**PARTICULATE EMISSIONS (EPA Method 5H
 Equivalents)**

Gram / Kilogram 2.6 g/kg
 Gram / Hour 3.4 g/hr
 Gram / Cubic Meter 0.06 g/m³

BREAKDOWN OF ESS PARTICULATE SAMPLE

Rinse 25.5 mg
 XAD 6.3 mg
 Filter 15.7 mg
 Blank 0.0 mg
TOTAL **47.4 mg**

Notes:
 NM = Not Measured, NA = Not Applicable, NU = Not Used
 Total time flue temperature greater than 25°F over ambient temperature.

TEST PERFORMED BY: XYZ Testing International, Olympia Washington, 98504

31.203.13 Calibrations.

31.203.13.1 Balance. Before each certification test, the balance used for weighing test-fuel charges shall be audited by weighing at least one calibration weight (Class F) that corresponds to 20 percent to 80 percent of the expected test-fuel charge weight. If the scale cannot reproduce the value of the calibration weight within 0.1 lb (0.05 kg) or 1 percent of the expected test-fuel charge weight, whichever is greater, re-calibrate the scale before use with at least five calibration weights spanning the operational range of the scale.

31.203.13.2 Temperature Monitor. Calibrate the temperature monitor before the first certification test and semiannually thereafter.

31.203.13.3 Fuel Moisture Meter. Calibrate the fuel moisture meter as per the manufacturer's instructions before each certification test.

31.203.13.4 Anemometer. Calibrate the anemometer as specified by the manufacturer's instructions before the first certification test and semiannually thereafter.

31.203.13.5 Barometer. Calibrate the barometer against a mercury barometer before the first certification test and semiannually thereafter.

31.203.13.6 Draft Gauge. Calibrate the draft gauge as per the manufacturer's instructions; a liquid manometer does not require calibration.

31.203.13.7 ESS. The ESS shall be calibrated as specified in Section 31.203.12.1.

31.203.14 Reporting Criteria. Submit both raw and reduced data for all fireplace tests. Specific reporting requirements are as follows:

31.203.14.1 Fireplace Identification. Report fireplace identification information including manufacturer, model, and serial number. Include a copy of fireplace installation and operation manuals.

31.203.14.2 Test Facility Information. Report test facility location, temperature, and air velocity information.

31.203.14.3 Test Equipment Calibration and Audit Information. Report calibration and audit results for the test-fuel balance, test-fuel moisture meter, analytical balance, and sampling equipment including volume metering systems and gaseous analyzers.

31.203.14.4 Pretest Information and Conditions. Report all pretest conditions including test-fuel charge weight, fireplace temperatures, and air supply settings.

31.203.14.5 Particulate Emission Data. Report a summary of test results for all test-burns conducted and the arithmetically averaged emission factor for all test-burns used for certification. Submit copies of all data sheets and other records collected during the testing. Submit examples of all calculations.

31.203.14.6 Required Test Report Information and Suggested Format. Test report information requirements to be provided to DOE for approval/certification of fireplaces are presented in this

Standard. The requirements are presented here in a recommended report format.

31.203.14.6.1 Introduction.

1. Purpose of test: Certification or audit.
2. Fireplace identification: Manufacturer, model number, catalytic/non-catalytic, and options. Include a copy of fireplace installation and operation manuals.
3. Laboratory: Name, location, and participants.
4. Test information: Date fireplace was received, date of tests, sampling methods used, and number of test-burns.

31.203.14.6.2 Summary and Discussion of Results.

1. Table of results: Test-burn number, burn rate, particulate emission factor (in U. S. EPA Method 5H equivalents), efficiency (if determined), and averages (indicate which test-burns are used).
2. Summary of other data: Test facility conditions, surface temperature averages, catalyst temperature averages, test-fuel charge weights, and test-burn times.
3. Discussion: Specific test-burn problems and solutions.

31.203.14.6.3 Process Description.

1. Fireplace dimensions: Volume, height, width, lengths (or other linear dimensions), weight, and hearth area.
2. Firebox configuration: Air supply locations and operation, air supply introduction location, refractory location and dimensions, catalyst location, baffle and by-pass location and operation (include line drawings and photographs).
3. Process operation during test: Air supply settings and adjustments, fuel bed adjustments, and draft.
4. Test fuel: Test fuel properties (moisture and temperature), test fuel description (include line drawing or photograph), and test fuel charge density.

31.203.14.6.4 Sampling Locations. Describe sampling location relative to fireplace. Include linedrawings and photographs.

31.203.14.6.5 Sampling and Analytical Procedures.

1. Sampling methods: Brief reference to operational and sampling procedures, and optional and alternative procedures used.
2. Analytical methods: Brief description of sample recovery and analysis procedures.

31.203.14.6.6 Quality Control and Assurance Procedures and Results.

1. Calibration procedures and results: Certification, sampling, and analysis procedures.
2. Test method quality control procedures: Leak-checks, volume-meter checks, stratification (velocity) checks, and proportionality results.

31.203.14.6.7 Appendices.

1. **Results and Example Calculations.** Include complete summary tables and accompanying examples of all calculations.
2. **Raw Data.** Include copies of all uncorrected data sheets for sampling measurements, temperature records, and sample recovery data. Include copies of all burn rate and fireplace temperature data.
3. **Sampling and Analytical Procedures.** Include detailed description of procedures followed by laboratory personnel in conducting the certification test, emphasizing particularly, parts of the procedures differing from the prescribed methods (e.g., DOE approved alternatives).
4. **Calibration Results.** Summary of all calibrations, checks, and audits pertinent to certification test results including dates.
5. **Participants.** Test personnel, manufacturer representatives, and regulatory observers.
6. **Sampling and Operation Records.** Copies of uncorrected records of activities not included on raw data sheets (e.g., fireplace door open times and durations).
7. **Additional Information.** Fireplace manufacturer's written instructions for operation during the certification test and copies of the production-ready (print-ready) temporary and permanent labels required in Section 31.208 shall be included in the test report prepared by the test laboratory.

31.203.14.7 References.

1. Code of Federal Regulations, U. S. EPA Title 40, Part 60, Subpart AAA and Appendix A (40 CFR Part 60).
2. Barnett, S. G. and P. G. Fields, 1991, "In-Home Performance of Exempt Pellet Stoves in Medford, Oregon," prepared for U. S. Department of Energy, Oregon Department of Energy, Tennessee Valley Authority, and Oregon Department of Environmental Quality, July 1991.
3. Barnett, S. G. and R. R. Roholt, 1990, "In-Home Performance of Certified Pellet Stoves in Medford and Klamath Falls, Oregon," prepared for the U. S. Department of Energy, 1990.
4. Barnett, S. G., 1990, "Field Performance of Advanced Technology Woodstoves in Glens Falls, New York, 1988-1989," for New York State Energy Research and Development Authority, U. S. EPA, Coalition of Northeastern Governors, Canadian Combustion Research Laboratory, and the Wood Heating Alliance, December 1989.

NEW SECTION

WAC 51-30-31204 Section 31.204--Approval procedure for fireplaces. On or after the effective date of this regulation, a manufacturer or builder of a fireplace who wishes to have a fireplace model line or fireplace design designated as an approved (or certified) fireplace, shall submit to DOE for its review the following information:

31.204.1 Manufacturer name and street address, model or design identification, construction specifications, and drawings of the firebox and required chimney system.

31.204.2 A test report prepared in accordance with Section 31.203.14.6 showing that testing has been conducted by a DOE approved and U. S. EPA accredited laboratory, and that the arithmetically averaged particulate emission factors for that fireplace model line or design, tested in accordance with UBC Standard Section 31.202, does not exceed 7.3 g/kg (U. S. EPA Method 5H equivalent as determined in Section 31.203.12.6.3.2) for a factory-built fireplace model lines or designs or 12.0 g/kg (U. S. EPA Method 5H equivalent as determined in Section 31.203.12.6.3.2) for new certified masonry fireplace model lines or designs. After January 1, 1999, particulate emission factors for factory-built and new certified masonry fireplace model lines or designs shall not exceed 7.3 g/kg (U. S. EPA Method 5H equivalents as determined in Section 31.203.12.6.3.2).

NEW SECTION

WAC 51-30-31205 Section 31.205--Approval of non-tested fireplaces. On or after the effective date of this regulation, DOE may grant approval for a fireplace model line or design that has not been tested pursuant to Section 31.204 upon submission of the following by the applicant:

31.205.1 Manufacturer name and street address, model or design identification, construction specifications, and drawings of the internal assembly system.

31.205.2 Documentation from an EPA accredited laboratory that the model is a fireplace within the definition of this regulation, has substantially the same core construction as a model already tested by a DOE approved and EPA accredited laboratory, and is substantially similar to the approved model in internal assembly design, combustion function, and probable emissions performance as listed in Section 31.204.2.

NEW SECTION

WAC 51-30-31206 Section 31.206--Approval through alternative test protocol. As provided in Section 31.202.4, an alternative testing protocol may be submitted by a DOE approved and EPA accredited laboratory for acceptance by DOE as equivalent to Uniform Building Code Standard 31-2.

NEW SECTION

WAC 51-30-31207 Section 31.207--Approval termination. All fireplace model line or design approvals shall terminate five years from the approval date. Previously approved fireplace model line and/or design may be granted re-approval (re-certification) upon application to and review by DOE. No testing shall be required for fireplace model line or design re-approvals unless DOE determines that design changes have been incorporated into the fireplace that could adversely affect the emissions factor, or testing is otherwise stipulated by DOE.

DOE may revoke a fireplace model line or design approval certification if it is determined that the fireplaces being produced in a specific model line do not comply with the requirements of Section 31.200. Such a determination shall be based on all available evidence, including:

1. Test data from a retesting (audit test) of the original unit on which the certification test was conducted or a sample unit from the current model line,
2. A finding that the certification test was not valid,
3. A finding that the labeling of the fireplace does not comply with the requirements of Section 31.200,
4. Failure by the fireplace manufacturer (builder) to comply with reporting and record keeping requirements under Section 31.200,
5. Physical examination showing that a significant percentage of production units inspected are not similar in all material respects to the fireplace submitted for testing, or
6. Failure of the manufacturer to conduct a quality assurance program in conformity with Section 31.208.

Revocation of certification under this section shall not take effect until the manufacturer (builder) concerned has been given written notice by DOE setting forth the basis for the proposed determination and an opportunity to request a hearing.

NEW SECTION

WAC 51-30-31208 Section 31.208--Quality control. Once within 30 days of each annual anniversary after the initial approval/certification, a DOE approved and U. S. EPA accredited laboratory shall inspect the most recently produced fireplace of an approved model line or design at its manufacturing location (site, if site-built) to document adherence to the approved/certified fireplace design specifications. If no fireplaces of an approved model line or design were produced (built) during the previous 12 months, no inspection is required.

An inspection report for each approved fireplace model line or design must be submitted to DOE within 30 days after the inspection date. The inspection report shall include, as a minimum, the model

identification and serial number of the fireplace inspected, the location where the model was inspected, the names of the manufacturer's and/or builder's representatives present, the date of inspection, and a description of any changes made to the approved fireplace model line or design since the last inspection. The U. S. EPA accredited laboratory which conducts the annual quality control inspection is responsible for auditing the content and format of all labels to be applied to approved fireplaces as stipulated in Section 31.209.

A fireplace model line or design shall be re-tested in accordance with Section 31.202 if it is determined during inspection that design changes have been incorporated into the approved/certified fireplace design which adversely affect the fireplace particulate emissions factor. Design elements which can affect fireplace particulate emissions include:

1. Grate placement and height,
2. Air supply minimum and maximum controls,
3. Usable hearth area, and
4. Firebox height, width, and length dimensions.

NEW SECTION

WAC 51-30-31209 Section 31.209--Permanent label, temporary label and owner's manual.

31.209.1 Labels and the Owner's Manual. Labels and owner's manual shall be prepared and installed in all certified "For Sale" fireplaces as specified in U. S. EPA 40 CFR Part 60, Section 60.536. Information that shall be presented on all labels includes:

1. Manufacturer's or builder's name, address, and phone number,
2. Model number and/or name,
3. Month and year of manufacture,
4. Starting and ending dates for the 5-year approval period,
5. If a fireplace was tested and approved with an emissions control device which is not an integral part of the fireplace structure, the label shall state that "The fireplace can not be sold or installed without the specified emissions control device in place and operational."
6. On certified fireplaces the statement: "This appliance has been tested and has demonstrated compliance with Washington State amendment to the UBC Standard, Chapter 31-2 requirements."

NEW SECTION

WAC 51-30-31210 Section 31.210--List of approved fireplaces.
DOE shall maintain a list of approved fireplace model lines and designs, and that list shall be available to the public.